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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peri L. Tarr

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EXAMINER

DAO, THUY CHAN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/802,044	Applicant(s) TARR ET AL.	
	Examiner Thuy Dao	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the amendment filed on January 7, 2008.
2. Claims 1-32 have been examined.

Response to Amendments

3. Per Applicants' request, claims 1, 7-8, 22, and 28-30 have been amended and claims 31-32 have been added.
4. The objection to claim 19 is withdrawn in view of Applicants' amendments.

Drawings

5. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (e.g., specification, page 1, lines 21-22 and page 6, lines 10-11).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. See MPEP § 608.02(g).

Response to Arguments

6. Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections – 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-19 and 31-32 are rejected because the claimed invention is directed to non-statutory subject matter:

Independent claim 1 directs to "[a] system", which may comprise only software components such as "a specifying device" (a query tool as a software component recited in dependent claim 6) and "an identifying device" (also a software component as described in FIG. 3A-B and related text in page 13, lines 10-17).

Independent claim 18 directs to "[a] concern manipulation environment (CME)", which may comprise only software components such as "the system of claim 1" (claim 18, lines 1-2).

Claims 1 and 18 amount to Functional Descriptive Material: "Data Structures" representing descriptive material per se or "Computer Programs" representing computer listings per se.

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer

element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. See MPEP 2106.

Dependent claims 2-17, 19, and 31-32 do not cure the deficiencies as noted above, thus, also amount to Functional Descriptive Material: "Data Structures" representing descriptive material per se or "Computer Programs" representing computer listings per se.

Under the principles of compact prosecution, claims 1-19 and 31-32 have been examined as the Examiner anticipates the claims will be amended to obviate these 35 USC § 101 issues. For example (proposal only), - - *A system, embedded in a programmable storage medium, ...* - - as similarly recited in independent claim 29.

Claim Rejections – 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1-32 are rejected under 35 U.S.C. 102(a) as being anticipated by "A Study of Program Evolution Involving Scattered Concerns" to Robillard et al. (art made of record, hereinafter "Robillard").

Claim 1:

Robillard discloses *a system for identifying concerns, comprising:*

a specifying device for specifying at least one initial concern in a software system (e.g., page 4, FIG. 1, root concern and two sub-concerns; page 5, left column: 1-35); and

an identifying device for identifying at least one related concern in said software system having a relationship with said at least one initial concern (e.g., page 4, FIG. 1, top-right window Relations; page 4, left column: 23-40).

Claim 2:

The rejection of claim 1 is incorporated. Robillard discloses *said at least one initial concern comprises a plurality of entities* (e.g., page 4, FIG. 1, initial concern has two sub-concerns; page 5, left column: 1-35).

Claim 3:

The rejection of claim 1 is incorporated. Robillard discloses *said relationship comprises a call to said at least one initial concern* (e.g., FIG. 1, top-right window Relations, page 4, left column: 23-40).

Claim 4:

The rejection of claim 1 is incorporated. Robillard discloses *said relationship comprises a call from said at least one initial concern* (e.g., FIG. 1, caller and callee in FIG. 1).

Claim 5:

The rejection of claim 1 is incorporated. Robillard discloses *said relationship comprises a same class that can be created by the concern, a same class that can be created from the concern, a reference to same data as the initial concern, and a union or intersection of two concerns* (e.g., page 2, right column: 59 - page 3, left column: 16).

Claim 6:

The rejection of claim 1 is incorporated. Robillard discloses *said specifying device comprises a query tool for inputting a query, such that said initial concern is returned as a result of said query* (e.g., page 2, left column: 3-26; page 3, right column: 55-60).

Claim 7:

The rejection of claim 1 is incorporated. Robillard discloses *said at least one initial concern and said at least one related concern comprise source code in said a software system* (e.g., page 2, right column: 59 – page 3, left column: 16).

Claim 8:

The rejection of claim 1 is incorporated. Robillard discloses *said at least one initial concern and said at least one related concern comprise other than source code in said a software system* (e.g., page 4, right column: 20-30).

Claim 9:

The rejection of claim 6 is incorporated. Robillard discloses *a navigating device for navigating said software system in an integrated development environment IDE* (e.g., page 3, right column: 25-39).

Claim 10:

The rejection of claim 6 is incorporated. Robillard discloses *said system is part of an integrated development environment (IDE) for displaying said at least one initial and at least one related concern, and navigating said software system* (e.g., page 6, section 4.3 Code Navigation).

Claim 11:

The rejection of claim 9 is incorporated. Robillard discloses *said navigating device comprises a graphical user interface (GUI) for using said at least one initial concern and said at least one related concern to explore said software system and construct a new software system* (e.g., page 4, FIG. 1, page 5, left column: 1-35).

Claim 12:

The rejection of claim 9 is incorporated. Robillard discloses *said navigating said software system comprises navigating said software system using both virtual and actual structuring of different artifacts within said software system* (e.g., page 6, left column: 5-44).

Claim 13:

The rejection of claim 9 is incorporated. Robillard discloses *said navigating said software system comprises using said navigating device to explore concerns and the relationships between said concerns based on a visual representation of query results* (e.g., page 6, left column: 23-55).

Claim 14:

The rejection of claim 9 is incorporated. Robillard discloses *said navigating device comprises a visual diagram which gives call relations between different parts of a program selected by query operators expressed as regular expressions* (e.g., page 6, section 4.3 Code Navigation).

Claim 15:

The rejection of claim 1 is incorporated. Robillard discloses *said identifying said at least one related concern comprises automatically generating said at least one related concern* (e.g., page 4, FIG. 1, top-left window automatically displaying concern and sub-concerns).

Claim 16:

The rejection of claim 1 is incorporated. Robillard discloses *said specifying device comprises at least one of a keyboard and a mouse for specifying said at least one initial concern* (e.g., page 4, left column: 23-40).

Claim 17:

The rejection of claim 1 is incorporated. Robillard discloses *said specifying said at least one initial concern comprises defining a query language comprising a set of operators and evaluation properties that together work to identify concerns within different artifacts that make up a software system* (e.g., page 3, right column: 41 – page 4, left column: 34).

Claim 18:

Robillard discloses *a concern manipulation environment (CME) comprising the system of claim 1* (e.g., page 3, right column: 25-39).

Claim 19:

The rejection of claim 18 is incorporated. Robillard discloses *a data structure is maintained for keeping concerns in sync with changes in a software system* (e.g., page 3, right column: 41 – page 4, left column: 34).

Claim 20:

Robillard discloses *a system for identifying concerns, comprising:*
a specifying device for specifying a query against artifacts related to software development, including software, generated code, or models and information about software (e.g., page 4, FIG. 1, page 5, left column: 1-35);
means of displaying the results of the query (e.g., FIG. 1, page 4, left column: 23-40); *and*
means of updating the query when at least one of new artifacts are introduced, artifacts are deleted, and artifacts are changed (e.g., page 2, right column: 56 - page 3, left column: 49).

Claim 21:

The rejection of claim 20 is incorporated. Robillard discloses *said results of said query comprise a concern* (e.g., page 4, right column: 20-30).

Claim 22:

Robillard discloses *a method of identifying concerns, comprising:*
specifying at least one initial concern in a software system (e.g., page 3, right column: 41 – page 4, left column: 34); and
identifying at least one related concern in said software system having a relationship with said at least one initial concern (e.g., page 4, FIG. 1, page 4, left column: 23-40; page 5, left column: 1-35).

Claim 23:

The rejection of claim 22 is incorporated. Robillard discloses *said relationship comprises at least one of a call to said at least one initial concern and a call from said at least one initial concern (e.g., page 3, right column: 25-39).*

Claim 24:

The rejection of claim 22 is incorporated. Robillard discloses *said specifying said at least one initial concern comprises using a query tool for inputting a query, such that said initial concern is returned as a result of said query (e.g., page 6, section 4.3).*

Claim 25:

The rejection of claim 22 is incorporated. Robillard discloses *displaying said at least one initial concern and said at least one related concern; and navigating said software system in an integrated development environment IDE (e.g., page 3, right column: 25-39).*

Claim 26:

The rejection of claim 22 is incorporated. Robillard discloses *said identifying said at least one related concern comprises automatically generating said at least one related concern (e.g., page 6, left column: 5-44).*

Claim 27:

The rejection of claim 22 is incorporated. Robillard discloses *said at least one initial concern comprises at least one of an extensional concern and an intensional concern* (e.g., page 6, left column: 23-55).

Claim 28:

Robillard discloses *a method of generating concerns, comprising:*

identifying a first concern in a software system (e.g., page 4, FIG. 1, root concern; page 5, left column: 1-35);

examining a program using said first concern (e.g., FIG. 1, top-right and below windows, page 4, left column: 23-40);

identifying a second concern in said software system using said first concern and text of said program (e.g., page 4, FIG. 1, sub-concerns; top-right windows Relations; page 4, left column: 23-40); and

displaying and navigating concerns in an integrated development environment IDE (e.g., page 3, right column: 25 – page 4, left column: 34).

Claim 29:

Robillard discloses *a programmable storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of identifying concerns, said method comprising:*

specifying at least one initial concern in a software system (e.g., page 4, FIG. 1, page 5, left column: 1-35); and

identifying at least one related concern in said software system having a relationship with said at least one initial concern (e.g., FIG. 1, page 4, left column: 23-40).

Claim 30:

Robillard discloses *a method for deploying computing infrastructure in which computer-readable code is integrated into a computing system, such that said code and*

said computing system combine to perform a method of identifying concerns, said method of identifying concerns comprising:

specifying at least one initial concern in a software system (e.g., page 4, right column: 20-30; page 5, right column: 1-26); and

identifying at least one related concern in said software system having a relationship with said at least one initial concern (e.g., FIG. 1, top-right and below windows; page 4, left column: 23-40).

Claim 31 (new):

The rejection of claim 1 is incorporated. Robillard discloses *said at least one initial concern and said at least one related concern comprise a part of said software system which relates to some concept, goal, purpose or requirement (e.g., page 4, right column: 20-30; page 5, right column: 1-26).*

Claim 32 (new):

The rejection of claim 1 is incorporated. Robillard discloses *said at least one initial concern and said at least one related concern comprise at least one of a feature, component, variant, user interface, instrumentation, first-failure data capture, quality of service, security, and policy (e.g., page 1, left column: 1-30).*

Conclusion

11. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone/fax numbers are (571) 272 8570 and (571) 273 8570, respectively. The examiner can normally be reached on every Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T Dao/

/Tuan Q. Dam/

Supervisory Patent Examiner, Art Unit 2192